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The Adsorption of Chromate Ions by Colloidal Aluminum Hydroxide

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magnesium sulphate was measured. The solubility in pure water was found to be 0.003695 mols Cu $(IO_3)_2$ per liter. The activity coefficients of copper iodate were calculated from this data by the equation

$$\log f = \log f_o - \log \frac{S}{S_o}$$

the value of log f_o being obtained by extrapolation according to the method used by Le Mer. Log $\frac{S}{S_o}$ is the logarithm of the ratio of the solubility in the salt solution and in pure water. Below values of about 0.007M the observed values for log f agree with those calculated from the Bronsted and Le Mer form of the Debye- Huckel equation

$$-\log f = 1.01 \sqrt{\mu}$$

Above 0.007M the observed values are higher than the calculated.

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THE ADSORPTION OF CHROMATE IONS BY COLLOIDAL ALUMINUM HYDROXIDE

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A stable suspension of Aluminum Hydroxide was prepared by electro-dialysis of the precipitate formed by the reaction between Aluminum Chloride and Ammonium Hydroxide. Increasing quantities of a solution of potassium chromate solution were added to equal quantities of the suspension and the quantity adsorbed determined by titrating the residual solution with standard ferrous sulphate. At the concentrations below that required for complete coagulation, the suspensiod was removed by ultrafiltration.

The results show three distinct stages of adsorption with increasing concentrations of the coagulating ion; one before complete coagulation, a second just after complete coagulation the magnitude of which seemed to bear some relation to the age of the suspension, and a third which follows the Adsorption Isotherm fairly well. It is evident that the mechanics of adsorption before and after coagulation are not identical.

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